

Agricultural Water Demand

Northwest Basins Planning Area
Stakeholders Meeting

February 28, 2017

John Riggins



Stakeholder's Comments from the Past Meetings

- Many comments have been made about focusing the Planning Area meetings on recent agricultural water use in the Northwest Basins
- Stakeholders have expressed concern regarding a recent increase in agricultural water use in the Planning Area

Agricultural Water Demand Data Sources

1. U.S. Geological Survey (USGS) - Field Verification of Groundwater Basins per ADWR Request

- Field Verification of Crops for Northwest Basins for the Hualapai and Sacramento Valleys
 - 2014, 2015 & 2016*
- Planned Field Verification for 2017

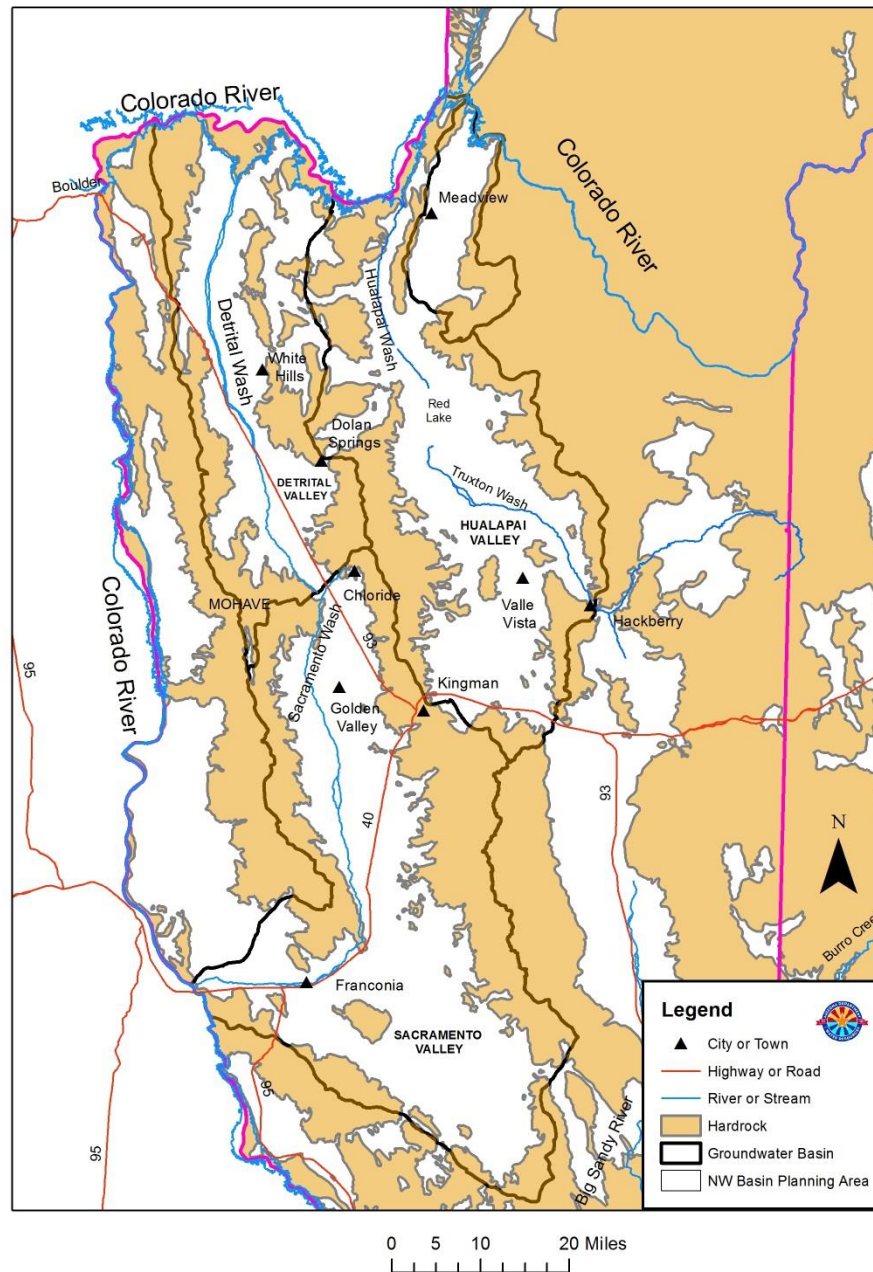
2. Water User input & feedback

*2016 is still Provisional Estimated data water withdrawals for Hualapai and Sacramento Basins

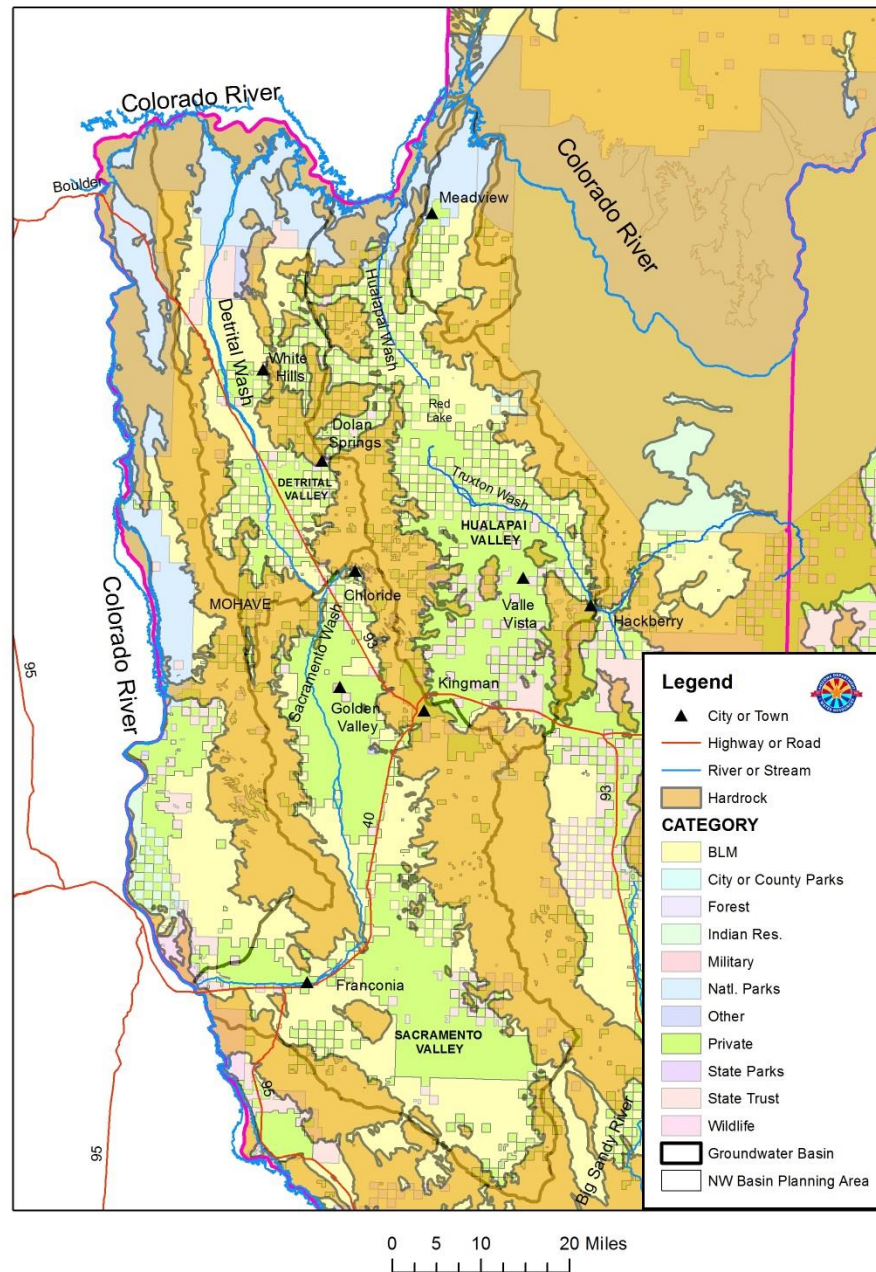
U.S. Geological Survey Data Collection

- **The USGS collects and estimates annual water withdrawals for the Department for groundwater basins outside of Active Management Areas**
 - Areas where reporting is not required
- **Before 1991, the USGS used power use data to estimate irrigation groundwater withdrawals for these areas.**
- **After 1991, the USGS established a method to calculate groundwater withdrawals for irrigation using these variables:**
 - Crop type
 - Irrigation-requirement rates for a specific crop
 - Irrigation type

Northwest Basins Planning Area

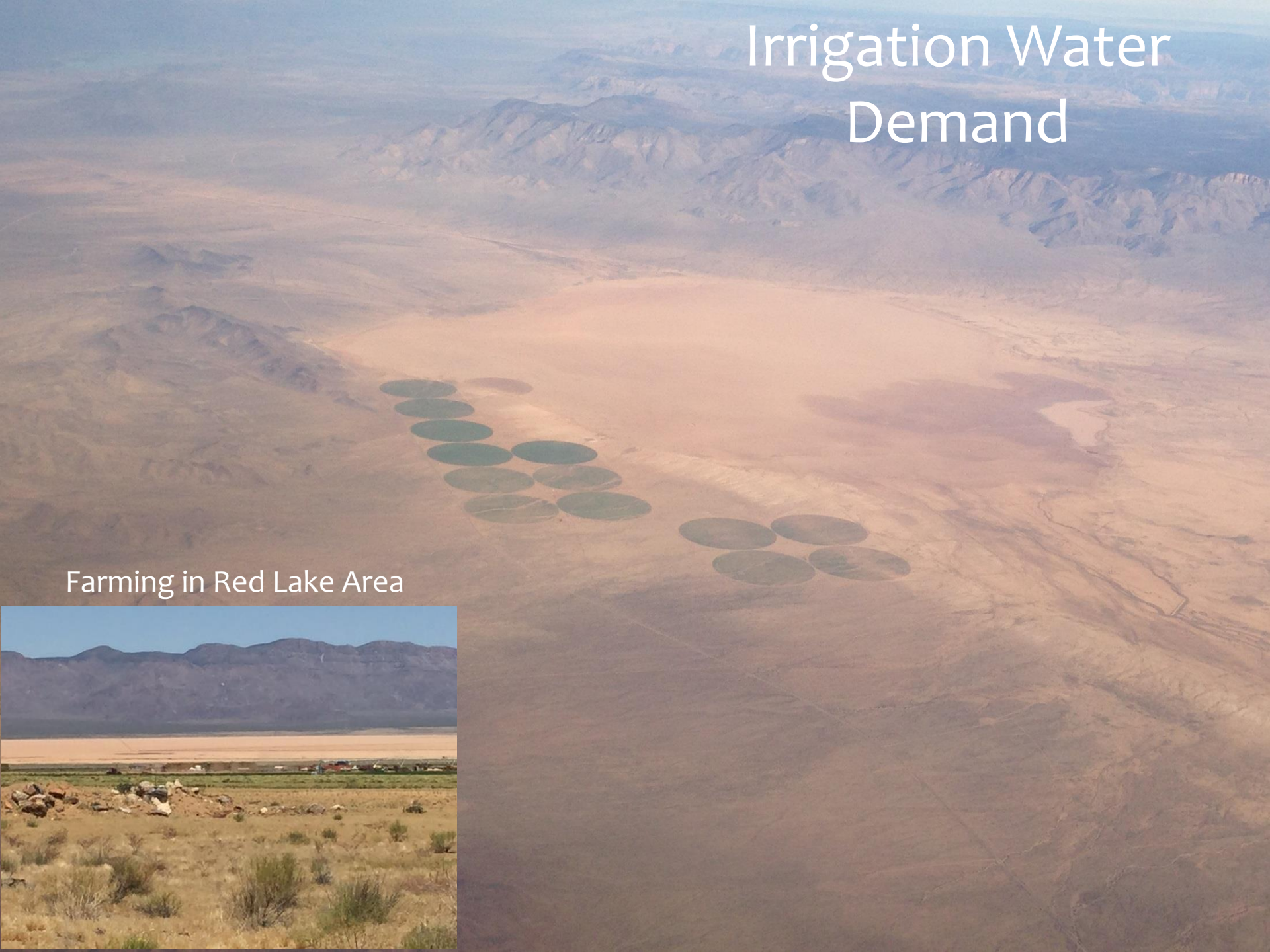


Northwest Basins Land Ownership



Irrigation Water Demand

Farming in Red Lake Area



Irrigation Water Demand

Farming in Long Mountain Area

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Google earth

Imagery Date: 2/15/2015 35°26'14.27" N 113°56'16.61" W elev 3100 ft eye alt 16.80 mi

Irrigation Water Demand

Farming in Golden Valley Area
Sacramento Valley Groundwater Basin

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Northwest Basins Estimated Agricultural Water Demand

Basin	2014	2015	*2016
Hualapai Basin	8,000	23,000	32,600
Sacramento Basin	<300	2,000	761
Detrital Basin	0	0	0
Meadview Basin	0	0	0
TOTAL	>8,000	25,000	33,361

*2016 is still Provisional Estimated data water withdrawals for Hualapai and Sacramento Basins

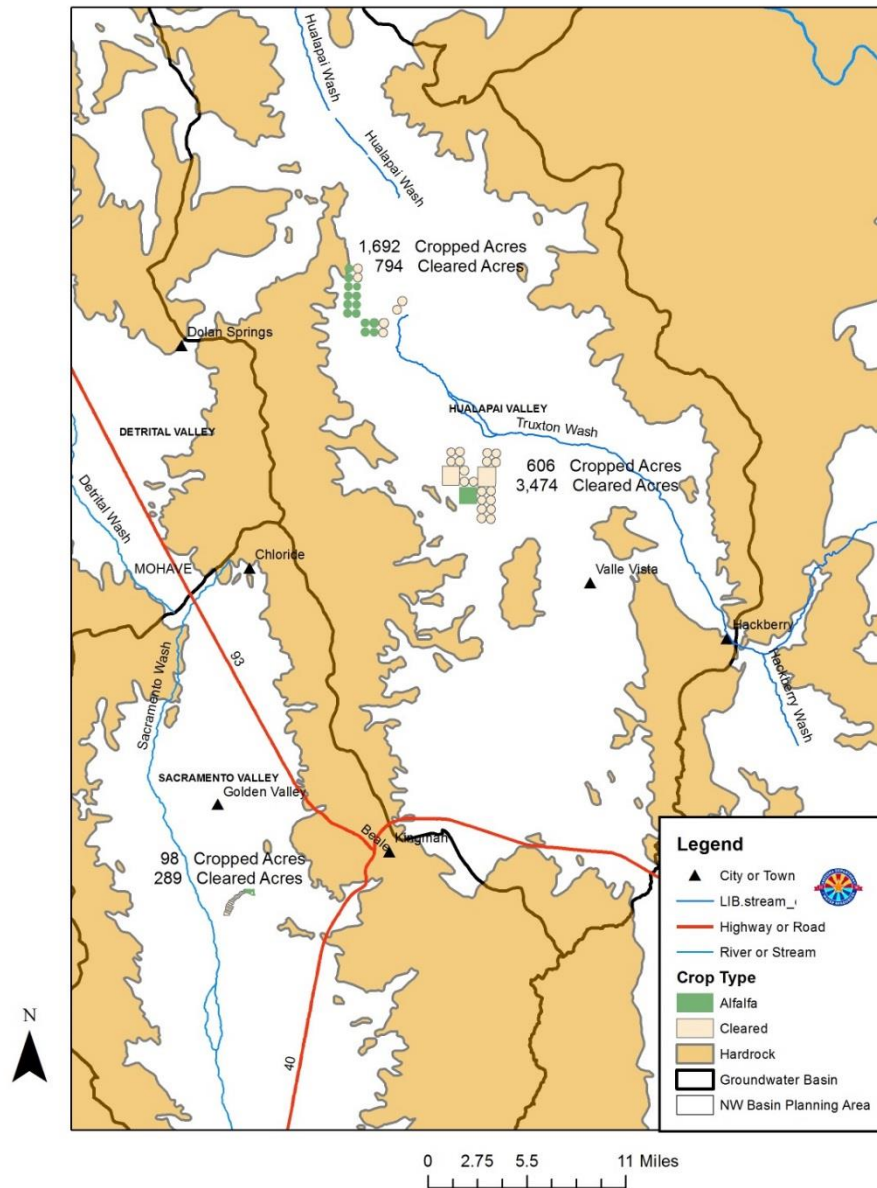
*All water demand values in acre-feet

Comparative Data USGS

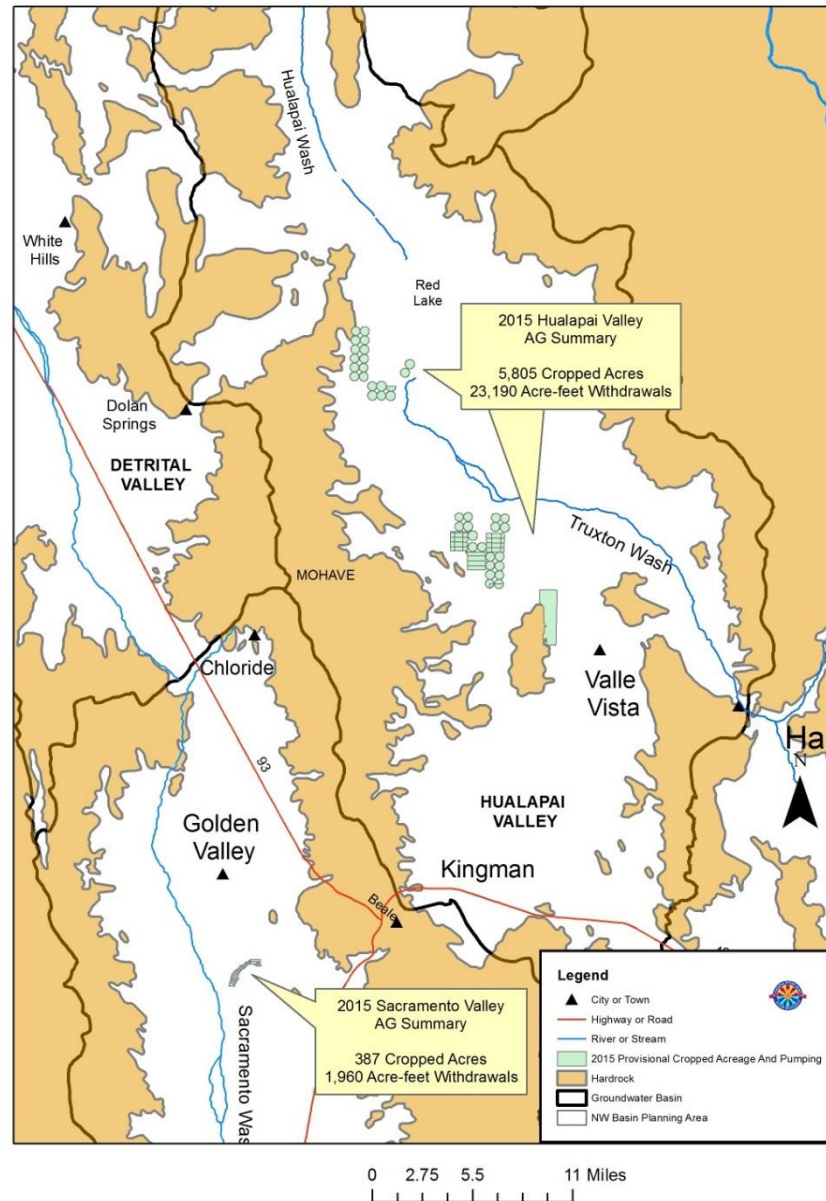
Basin	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
McMullen Valley	76,000	73,000	74,500	80,500	80,000	81,000	81,000	72,000	78,500	86,000	89,000	90,000	
Willcox	124,000	112,000	128,000	130,000	124,000	125,000	127,000	128,000	104,000	134,000	152,000	166,000	
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	91,500	94,000	81,000	71,000	70,000	64,500	63,000	61,000	60,500	49,000	51,500	47,500	67,000
	180,000	151,000	182,000	166,000	183,000	198,000	145,000	162,000	148,000	161,000	161,000	172,000	175,000
Basin	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Hualapai	-	-	-	-	-	-	-	-	-	-	-	-	
Sacramento Valley	-	-	-	-	-	-	-	-	-	-	-	-	
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	-	-	-	-	-	-	-	-	-	-	-	8,000	23,000
	-	-	-	-	-	-	-	-	-	-	-	<300	2,000

All demand values in acre-feet

USGS 2014 Cropped or Cleared Agricultural Areas in NW Basins Planning Area



2015 USGS Agricultural Acreage and Pumpage in Northwest Basins Planning Area



2015 NW Basins Crop Analysis

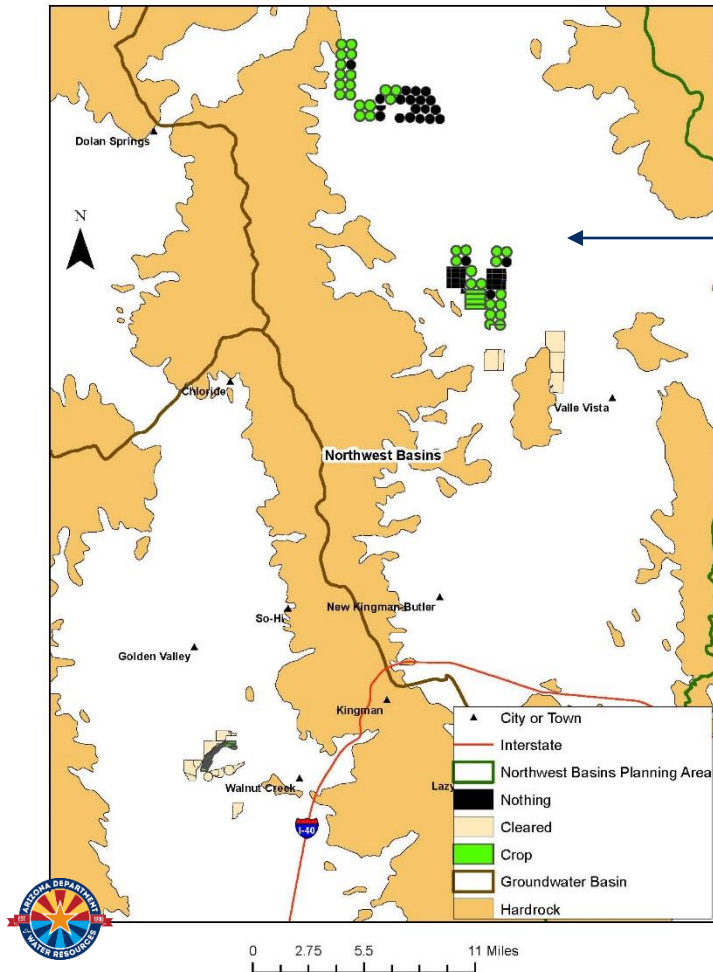
Cropped Acreage

Acres	Crop	Water Demand
6,185.6	Alfalfa	25,135
1,439.5	Cleared	0
1,439.5	Fallow	0
6.4	Orchard	20

All water demand values in acre-feet

2016 USGS Provisional Irrigation Water Demand: Hualapai Valley Groundwater Basin

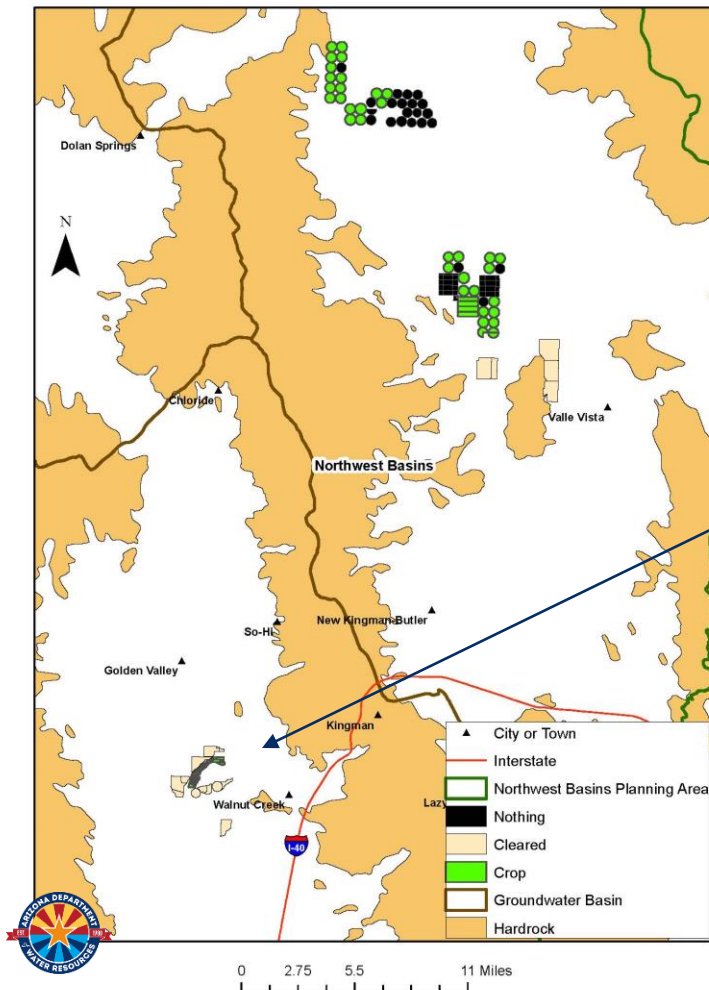
USGS 2016 Provisional NW Basins Crop Survey



- The US Geological Survey has estimated the total cropped acreage in 2016 for the Hualapai Valley Groundwater Basin to be about 7,900 acres, with estimated agricultural groundwater withdrawals for all of 2016 to be about 32,600 acre-feet (USGS, 2016)

2016 USGS Provisional Irrigation Water Demand: Sacramento Valley Groundwater Basin

USGS 2016 Provisional NW Basins Crop Survey



The US Geological Survey has estimated the total cropped agricultural acreage in 2016 for the Sacramento Valley Groundwater Basin to be approximately 387 acres, with estimated agricultural groundwater withdrawals for all of 2016 to be about 761 acre-feet (USGS, 2016)

2013 2014 2015 2016

Questions?

